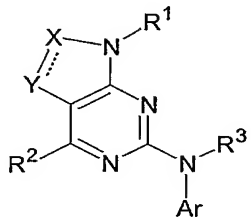
CLAIMS

1. A pyrrolopyrimidine derivative represented by the following formula [I]:



[I]

(wherein R^1 is C_{1-9}alkyl, C_{2-9}alkenyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-9}alkyl, di(C_{3-7}cycloalkyl)-C_{1-9}alkyl, C_{1-6}alkoxy-C_{1-9}alkyl, di(C_{1-6}alkoxy)-C_{1-9}alkyl, hydroxy-C_{1-9}alkyl, cyano-C_{1-9}alkyl, carbamoyl-C_{1-9}alkyl, di(C_{1-6}alkyl)amino-C_{1-9}alkyl, aryl, heteroaryl, aryl-C_{1-9}alkyl or heteroaryl-C_{1-9}alkyl, in which said aryl and heteroaryl are optionally substituted with one to three substituents independently selected from the group consisting of C_{1-6}alkyl, C_{1-6}alkoxy, C_{1-6}alkylthio, C_{1-6}alkylsulfonyl, aminosulfonyl, mono(C_{1-6}alkyl)aminosulfonyl, di(C_{1-6}alkyl)aminosulfonyl, halogen, C_{1-6}haloalkyl, cyano, nitro, $-NR^{1a}R^{1b}$, where R^{1a} and R^{1b} are each independently selected from the group consisting of hydrogen, C_{1-6}alkyl and C_{1-6}alkylcarbonyl;

R^2 is C_{1-6}alkyl or C_{1-6}haloalkyl;

R^3 is hydrogen, C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-6}alkyl, benzyl;

the bond between X and Y is a single bond or a double bond;

wherein (1) when the bond between X and Y is a single bond, X is CR^4R^5 or C=O; Y is CR^6R^7, C=O, C=N-OR^8 or C=CH-R^9; (2) when the bond between X and Y is a double bond, X is CR^{10}; Y is CR^{11};

R^4 and R^5 are the same or different, and independently are hydrogen or C_{1-6}alkyl;

R^6 and R^7 are the same or different, and independently are hydrogen, C_{1-6}alkyl, C_{3-6}cycloalkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, hydroxy, C_{1-6}alkylamino, di(C_{1-6}alkyl)amino, di(C_{1-6}alkyl)amino-C_{1-6}alkyl, C_{1-6}alkylcarbonylamino, C_{3-6}cycloalkylcarbonylamino, arylcarbonylamino, heteroarylcarbonylamino, C_{1-6}alkylaminocarbonyl or C_{1-6}alkylaminocarbonylamino; or R^6 and R^7 are taken together to form C_{3-6}cycloalkyl, with the proviso that not both of CR^4R^5 and CR^6R^7

are CH_2;

R^8 is hydrogen or C_{1-6}alkyl;

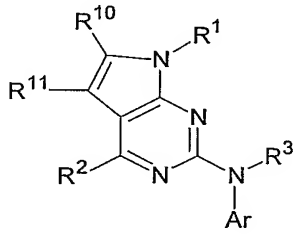
R^9 is C_{1-6}alkyl, C_{3-6}cycloalkyl, aryl or heteroaryl, wherein said aryl and heteroaryl are optionally substituted with one to three substituents independently selected from the group consisting of halogen or C_{1-6}alkyl;

R^{10} is hydrogen or C_{1-6}alkyl;

R^{11} is hydrogen, C_{1-6}alkyl or di(C_{1-6}alkyl)amino-C_{1-6}alkyl;

Ar is aryl or heteroaryl which aryl or heteroaryl is unsubstituted or substituted with 1 or more substituents, which are the same or different, selected from the group consisting of halogen, C_{1-6}alkyl, C_{3-7}cycloalkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{1-6}alkylthio, C_{1-6}alkylsulfonyl, aminosulfonyl, mono(C_{1-6}alkyl)aminosulfonyl, di(C_{1-6}alkyl)aminosulfonyl, cyano, C_{1-6}haloalkyl, trifluoromethoxy, difluoromethoxy, fluoromethoxy and -N(R^{12})R^{13}, wherein R^{12} and R^{13} are the same or different, and independently are hydrogen or C_{1-6}alkyl), individual isomers thereof or racemic or non-racemic mixtures of isomers thereof, or pharmaceutically acceptable salts and hydrates thereof.

2. The pyrrolopyrimidine derivative according to claim 1 represented by the following formula [II]:



[II]

(wherein R^1 is C_{1-9}alkyl, C_{2-9}alkenyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-9}alkyl, di(C_{3-7}cycloalkyl)-C_{1-9}alkyl, C_{1-6}alkoxy-C_{1-9}alkyl, di(C_{1-6}alkoxy)-C_{1-9}alkyl, hydroxy-C_{1-9}alkyl, cyano-C_{1-9}alkyl, carbamoyl-C_{1-9}alkyl, di(C_{1-6}alkyl)amino-C_{1-9}alkyl, aryl, heteroaryl, aryl-C_{1-9}alkyl or heteroaryl-C_{1-9}alkyl, in which said aryl and heteroaryl optionally substituted with one to three substituents independently selected from the group consisting of C_{1-6}alkyl, C_{1-6}alkoxy, C_{1-6}alkylthio, C_{1-6}alkylsulfonyl, aminosulfonyl, mono(C_{1-6}alkyl)aminosulfonyl, di(C_{1-6}alkyl)aminosulfonyl, halogen, C_{1-6}haloalkyl, cyano, nitro, -N$R^{1a}R^{1b}$, where R^{1a} and R^{1b} are each independently selected from the group consisting of hydrogen, C_{1-}

$_{6}$alkyl and C_{1-6}alkylcarbonyl;

R^2 is C_{1-6}alkyl or C_{1-6}haloalkyl;

R^3 is hydrogen, C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-6}alkyl, benzyl;

R^{10} is hydrogen or C_{1-6}alkyl;

R^{11} is hydrogen, C_{1-6}alkyl or di(C_{1-6}alkyl)amino-C_{1-6}alkyl;

Ar is aryl or heteroaryl which aryl or heteroaryl is unsubstituted or substituted with 1 or more substituents, which are the same or different, selected from the group consisting of halogen, C_{1-6}alkyl, C_{3-7}cycloalkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{1-6}alkylthio, C_{1-6}alkylsulfonyl, aminosulfonyl, mono(C_{1-6}alkyl)aminosulfonyl, di(C_{1-6}alkyl)aminosulfonyl, cyano, haloC_{1-6}alkyl, trifluoromethoxy, difluoromethoxy, fluoromethoxy and -N(R^{12})R^{13}, wherein R^{12} and R^{13} are the same or different, and independently are hydrogen or C_{1-6}alkyl), individual isomers thereof or racemic or non-racemic mixtures of isomers thereof, or pharmaceutically acceptable salts and hydrates thereof.

3. The pyrrolopyrimidine derivative according to claim 2 represented by the formula [II], wherein R^1 is C_{1-9}alkyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-6}alkyl, di(C_{3-7}cycloalkyl)-C_{1-6}alkyl, C_{1-6}alkoxy-C_{1-6}alkyl, di(C_{1-6}alkoxy)-C_{1-6}alkyl, hydroxy-C_{1-6}alkyl, cyano-C_{1-6}alkyl, carbamoyl-C_{1-6}alkyl, di(C_{1-6}alkyl)amino-C_{1-6}alkyl, aryl-C_{1-6}alkyl or heteroaryl-C_{1-6}alkyl; R^2 is C_{1-6}alkyl; R^3 is hydrogen or C_{1-6}alkyl; R^{10} is hydrogen or C_{1-6}alkyl; R^{11} is hydrogen, C_{1-6}alkyl or di(C_{1-6}alkyl)aminoC_{1-6}alkyl; Ar is aryl or heteroaryl which aryl or heteroaryl is unsubstituted or substituted with one to three substituents, which are the same or different, selected from the group consisting of halogen, C_{1-6}alkyl, C_{3-7}cycloalkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{1-6}alkylthio, cyano, trifluoromethyl, trifluoromethoxy, difluoromethoxy, fluoromethoxy and -N(R^{12})R^{13}, wherein R^{12} and R^{13} are the same or different, and independently are hydrogen or C_{1-6}alkyl, individual isomers thereof or racemic or non-racemic mixtures of isomers thereof, or pharmaceutically acceptable salts and hydrates thereof.

4. The pyrrolopyrimidine derivative according to claim 2 represented by the formula [II], wherein R^1 is C_{1-9}alkyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-6}alkyl, di(C_{3-7}cycloalkyl)-C_{1-6}alkyl, C_{1-6}alkoxy-C_{1-6}alkyl, di(C_{1-6}alkoxy)-C_{1-6}alkyl or aryl-C_{1-6}alkyl; R^2 is C_{1-6}alkyl; R^3 is hydrogen or C_{1-6}alkyl; R^{10} is hydrogen or C_{1-6}alkyl; R^{11}

is hydrogen or C_{1-6}alkyl; Ar is phenyl which phenyl is unsubstituted or substituted with one to three substituents, which are the same or different, selected from the group consisting of halogen, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkylthio, trifluoromethyl and -N(R^{12})R^{13}, wherein R^{12} and R^{13} are the same or different, and independently are hydrogen or C_{1-3}alkyl, individual isomers thereof or racemic or non-racemic mixtures of isomers thereof, or pharmaceutically acceptable salts and hydrates thereof.

5. The pyrrolopyrimidine derivative according to claim 2 represented by the formula [II], wherein R^1 is C_{1-9}alkyl, C_{3-7}cycloalkyl, C_{3-7}cycloalkyl-C_{1-6}alkyl, di(C_{3-7}cycloalkyl)-C_{1-6}alkyl, C_{1-6}alkoxy-C_{1-6}alkyl, di(C_{1-6}alkoxy)-C_{1-6}alkyl or aryl-C_{1-6}alkyl; R^2 is C_{1-3}alkyl; R^3 is C_{1-3}alkyl; R^{10} is hydrogen; R^{11} is hydrogen; Ar is phenyl which phenyl is substituted with 2 or 3 substituents, which are the same or different, selected from the group consisting of halogen or C_{1-3}alkyl, individual isomers thereof or racemic or non-racemic mixtures of isomers thereof, or pharmaceutically acceptable salts and hydrates thereof.

6. An antagonist for CRF receptors, comprising a pyrrolopyrimidine derivative, a pharmaceutically acceptable salt thereof or its hydrate according to any one of claims 1 to 5, as an active ingredient.

7. Use of a pyrrolopyrimidine derivative, a pharmaceutically acceptable salt thereof or its hydrate according to any one of claim 1 to 5, for the manufacture of an antagonist for CRF receptors.